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BACKGROUND FOR EDITORS

ALL-IN-1 PHASE II: EVOLVING OFFICE COMPUTING INTO THE 90'S

The goal of Digital's office computing strategy is to provide customers an open networked environment in which all users can easily work together, sharing information and insight in dynamic task-oriented teams, using their own chosen style of work.

Digital is now delivering the next generation of office computing systems under the ALL-IN-1 Phase II program, the company's office computing strategy for the '90s. ALL-IN-1 Phase II products are built on Digital's software strategy for the 90s -- Network Application Support (NAS) -- making Digital the only vendor whose office strategy for the next decade meets the key criteria demanded by users:

- o the ability to choose the right desktop device for each user, and to integrate these different desktops -- whether terminals, MS-DOS PCs, OS/2 PCs, Macintosh systems, or VMS and ULTRIX workstations;
- o the ability to establish a free flow of enterprise-wide and inter-enterprise communications, through the support of open standards;
- o the ability to easily use network applications, so that users can take advantage of new technology like object-oriented systems;

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- o the ability to easily manage networked systems, so that system managers can deploy consistent applications and services in distributed multi-vendor environments; and
- o the ability to evolve -- not replace -- office systems as new technologies and new applications become available, and as new business needs arise.

This next step in the evolution of Digital's office computing strategy embodies significant new directions: the ALL-IN-1 Phase II program extends the strategy beyond timesharing implementations only, to an open client/server system in which VAX and RISC servers will provide the benefits of NAS services -- and office applications built on those services -- to a broad range of desktop clients. These clients will include not only video terminals, but MS-DOS, Macintosh, OS/2 SE, and VMS and ULTRIX workstation systems as well. Table 1 summarizes this evolution.

NAS comprises a set of application services based on industry standards; applications and solutions built using NAS services answer users' needs for accessing, communicating, and sharing information and resources across a network of desktop devices, server systems, and operating systems from different vendors. Figure 1 presents this unified software environment.

ALL-IN-1 Phase II products utilize NAS Compound Document Services for sharing different types of data in revisable compound document format for electronic publishing; Communications Services like MAILbus for multi-vendor message transfer, and EDI services for exchanging structured business documents with vendors and customers; Application Access Services like the DECwindows graphical user interface; and Data Access Services like SQL/Services for transparent access to distributed databases.

And as new NAS services become available, ALL-IN-1 Phase II will deliver their benefits to office users worldwide as well.

	ALL-IN-1 Phase I	ALL-IN-1 Phase II
Products bearing the ALL-IN-1 name	ALL-IN-1 integrated office system	ALL-IN-1 integrated office system, and a compatible family of office products built on NAS.
Operating System	VAX/VMS only	Servers: VAX/VMS RISC/ULTRIX Desktops: MS-DOS Macintosh OS/2 SE VAX/VMS RISC/ULTRIX VTs, IBM 3270s
Computing Model	Timesharing	Client/server supporting: MS-DOS Macintosh OS/2 VMS DECwindows ULTRIX DECwindows VTs (timesharing) 3270s (timesharing)
Architecture/Services	Unique to ALL-IN-1 Integrated Office System product.	Built on NAS.
Applications	Developed mostly by Digital.	Developed by third parties and by Digital.
Computing Style	Departmental VAX systems and large VAXcluster systems.	VAX and RISC servers; departmental systems; large VAXcluster systems; PC LAN servers; distributed branch systems; and MS-DOS, Macintosh, OS/2 SE, VAX/VMS, RISC/ULTRIX, and VT and 3270 desktops.

Table 1: Evolution to ALL-IN-1 Phase II

Digital has taken significant steps in delivering on the ALL-IN-1 Phase II program. The ALL-IN-1 product family has been expanded to not only provide computing capabilities for organizations that need full-function integrated office systems, but to also provide solutions for organizations requiring separate but interoperable applications.

These new products include server software and client software for integrated office systems and for electronic mail, and new applications that help organizations analyze the information they need to run their business. And the ALL-IN-1 product family will continue to grow as Digital announces new applications and services for all NAS-supported servers and desktops. Table 2 outlines the first wave of ALL-IN-1 Phase II products announced by Digital.

ALL-IN-1 Phase II Products	Availability
Server software: ALL-IN-1 Version 2.4 for VMS ALL-IN-1 STARTER Version 2.4 for VMS ALL-IN-1 Mail Server Client software: ALL-IN-1 DESKtop for MS-DOS ALL-IN-1 DESKtop for VMS DECwindows ALL-IN-1 DESKtop Package for VMS DECwindows ALL-IN-1 DESKtop for Macintosh ALL-IN-1 DESKtop for OS/2 SE ALL-IN-1 Mail for MS-DOS ALL-IN-1 Mail for VMS DECwindows ALL-IN-1 Mail for Macintosh ALL-IN-1 Mail for MS-WINDOWS ALL-IN-1 Mail for OS/2 SE ALL-IN-1 Mail for VTs	January '90 April '90 January '90 January '90 July '90 July '90 by November '90 by November '90 January '90 January '90 by November '90 by November '90 by November '90 by November '90

Table 2: The First Wave of Digital's ALL-IN-1 Phase II Products

Separate ALL-IN-1 Applications for Different Integration Needs

ALL-IN-1 Phase II not only addresses the needs of customers who want a full integrated office information system, it also addresses the needs of those customers who instead prefer to buy their applications separately, as needed.

Digital offers new leadership electronic mail applications, business applications, and electronic publishing applications that allow team members to communicate and collaborate with each other throughout the network. These applications interoperate with each other and with the ALL-IN-1 integrated office system. And they offer the same industry-leading level of support for multi-vendor environments, are built on the same NAS application services, and deliver on the same commitment to protect investments as that provided with ALL-IN-1 integrated office system products.

ALL-IN-1 Mail: Leadership Mail Based on International Standards.
With over six million mail users worldwide, Digital is the leading electronic mail vendor. Digital's mail products lead the industry in functionality, and can be implemented for groups of ten or tens of thousands of users. And Digital's experience serving thousands of customers with thousands of mail users has afforded the company expertise that no other vendor can match.

For those customers requiring only an electronic messaging application, Digital offers the new ALL-IN-1 Mail products. ALL-IN-1 Mail adheres to international messaging standards set by the 1984 CCITT X.400 recommendations, allowing customers to implement a worldwide standards-based electronic messaging system that interoperates with a broad range of other vendors' mail systems and public mail systems. These products further deliver on Digital's commitment to OSI and X.400.

Implemented in a client/server computing environment, the mail-only ALL-IN-1 Mail application is fully compatible with the Electronic Messaging service used by ALL-IN-1 integrated office system users. The ALL-IN-1 Mail Server handles message transfer operations for ALL-IN-1 Mail client desktops. ALL-IN-1 Mail client software runs on the desktop device and provides the user interface and message creation tools; current desktop clients include ALL-IN-1 Mail for MS-DOS and ALL-IN-1 Mail for VMS DECwindows. ALL-IN-1 Mail for MS-DOS works in conjunction with Digital's PCSA (Personal Computing Systems Architecture) PC-integration software.

Because ALL-IN-1 Mail products utilize MAILbus -- the NAS multi-vendor message transfer service based on OSI -- users can exchange mail with users of IBM PROFS and SNADS, Wang OFFICE, Data General CEO, MCI Mail, GOLD 400, TELEX, UNIX, and additional X.400 systems. And the ALL-IN-1 Mail Personal Address Book integrates with the MAILbus Distributed Directory Service for network-wide multi-vendor directory inquiry.

With ALL-IN-1 Mail, customers are afforded a single X.400-based electronic messaging solution that maximizes flexibility in implementing future electronic messaging systems; improves cross-organizational communications at the enterprise, departmental, and workgroup level; protects investments in systems, desktops, and training; and provides the flexibility to meet specific end-user needs for related and complementary applications and desktop devices.

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The ALL-IN-1 Mail Server provides the core set of electronic mail services to be used by all future electronic mail products from Digital, including the ALL-IN-1 integrated office system. And within the next twelve months, Digital will deliver ALL-IN-1 Mail desktop clients for MS-WINDOWS, Macintosh, and OS/2 SE systems, as well as for time-sharing video terminals. And with the 3270 Option Card and DECserver 550 terminal server, IBM 3270 users will also be able to use ALL-IN-1 Mail. Figure 2 presents the ALL-IN-1 Phase II mail environments.

ALL-IN-1 Business Intelligence Applications Help Professionals Run Their Business. Digital is redefining the traditional decision support environment with the introduction of ALL-IN-1 Business Intelligence applications. These applications allow business professionals to access and analyze numeric and database information taken from a wide variety of applications, from spreadsheets to executive information systems. They can access corporate databases such as IBM IMS and DB2, and Digital's VAX Rdb/VMS and RMS. Users can share this information across the network -- in a form that can be taken from one application and easily used by another -- enabling them to gain insight into the way their business works, and providing a solid basis on which to make and implement critical business decisions. Figure 3 presents the ALL-IN-1 Business Intelligence environment.

ALL-IN-1 Business Intelligence applications are built on NAS Application Control Services, Data Access Services, and Compound Document Services, enabling the deployment of these applications and information throughout the network and across different desktops from different vendors. And with the VAX Rdb/VMS run-time license included with the VMS operating system, integration of these applications into ALL-IN-1 systems is made even easier.

The portfolio of ALL-IN-1 Business Intelligence applications includes innovative products like Digital's DECdecision advanced decision-support software, and Comshare's Commander EIS and Execucom's Executive Edge for executive support. Most recently, the Business Intelligence application portfolio has expanded to include advanced decision-support modeling systems like EFFEM Services' Acumate, IRI's EXPRESS for DECwindows, and Execucom's Paradigm. In the future, this portfolio will include applications like Lotus 1-2-3, Ashton-Tate's dBASE IV, Access Technology's 20/20 for DECwindows, Informix's Wingz, and Cognos' PowerPlay. And Business Intelligence applications will become even more tightly integrated with other ALL-IN-1 products.

ALL-IN-1 Phase II Electronic Publishing Solutions. Also available as separate applications complementing ALL-IN-1 applications are NAS-based electronic publishing solutions. By using the unique capabilities of NAS Compound Document Services, these applications allow users to share different types of information and interchange them between a variety of platforms, and bring them together in a single, revisable compound document. Figure 4 presents this capability. Using other ALL-IN-1 Phase II applications, documents can then be mailed electronically, printed, or posted in a group conference -- anywhere on the network. These electronic publishing applications include:

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- o DECwrite: DECwrite is a WYSIWYG compound document editor for electronic publishing on VAX and RISC workstations. DECwrite integrates word processing, desktop publishing, drawing, business graphics, and LiveLink connections that dynamically link information in the document to its source. This integration simplifies the electronic publishing process; users don't have to change between multiple programs and files, or worry about version incompatibilities -- one integrated product does it all.
- o DECimage solutions: DECimage is CDA compliant scanning software and hardware that captures, displays, and manipulates scanned images in multiple applications. DECimage also includes a set of software development tools and utilities for application developers to use in making their applications image-capable.
- o VAX VTX Version 4.0 corporate videotex software: VAX VTX is a "soft-copy" publishing tool for building on-line information access systems throughout the network.
- o WPS-PLUS/DOS: WPS-PLUS/DOS is fully-compatible WPS-PLUS word processing software for MS-DOS systems, and utilizes the CDA Converter Library.

In addition, many ISVs are including NAS Compound Document Services in their products. Some of these applications are Interleaf TPS from Interleaf, SuperImage from Computer Associates, ODMS document management system from Odesta, and PageStation from Datalogics.

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Setting the Standard in Integrated Office Systems

A key component of the ALL-IN-1 Phase II program is Digital's industry-leading ALL-IN-1 integrated office system, which today serves 3.3 million users throughout the world -- 40 percent of the worldwide integrated office systems installed base -- according to an April 1989 Dataquest research newsletter. Since its introduction in 1982, ALL-IN-1 has been far more than just an office system. Through its integrated, customizable office services like electronic file cabinet, document processing, and electronic messaging, ALL-IN-1 provides its users with advanced capabilities for information access, manipulation, and presentation. ALL-IN-1 also enables the integration of a wide range of business and office applications into the system, increasing the operational effectiveness of the individual, the department, and the enterprise. And ALL-IN-1 has always been flexible, enabling organizations to implement and network systems as needed -- to grow as the organization grows -- for ten or tens of thousands of users.

The 3.3 million ALL-IN-1 users today access the system in timeshared fashion from low-cost character-cell terminals or from terminal-emulating intelligent desktop devices, and ALL-IN-1 will continue to support the large and important timeshared user base. The newest release of the ALL-IN-1 integrated office system, ALL-IN-1 Version 2.4, also supports a client/server implementation. Digital has announced ALL-IN-1 DESKtop for MS-DOS client software for MS-DOS PCs, and ALL-IN-1 DESKtop for VMS DECwindows client software for VMS DECwindows workstations. And within the next twelve months, Digital will deliver similar ALL-IN-1 DESKtop products for Apple Macintosh and OS/2 SE systems.

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Working with ALL-IN-1 DESKtop client software, ALL-IN-1 Version 2.4 is a network-based server system that delivers a common set of services and applications to the broadest range of desktop devices. PC and VMS workstation users can take advantage of their existing desktop applications and computing power, and at the same time transparently use ALL-IN-1 server-based services such as

- File Cabinet;
- Time Management;
- integrated business applications;
- Document Processing
- Group Conferencing; and
- Electronic Messaging, which utilizes Digital's MAILbus -- the NAS multi-vendor message transfer service based on OSI -- for Distributed Directory Service network-wide multi-vendor directory inquiry, and for mail exchange with users of IBM PROFS and SNADS, Wang OFFICE, Data General CEO, MCI Mail, GOLD 400, TELEX, UNIX, and additional X.400 systems.

ALL-IN-1 DESKtop Software for Personal Computers and Workstations. ALL-IN-1 DESKtop software for PC and workstation clients supports users' preferred working styles. Users of PCs, workstations and VTs can work together -- sharing information throughout the network -- using their desktop applications and server-based ALL-IN-1 services.

ALL-IN-1 DESKtop Software for PCs: ALL-IN-1 DESKtop for MS-DOS is the first ALL-IN-1 Phase II product for personal computers. ALL-IN-1 DESKtop for MS-DOS enhances the current working environment of PC users, allowing them to fully utilize server-based ALL-IN-1 office services. The product lets users choose their own word processing and desktop publishing software; create, send, receive, and file mail messages; maintain personal action items and phone and address directories; and transfer files to and from the server system via message-based applications.

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ALL-IN-1 DESKtop for MS-DOS utilizes existing investments to access network-based information and resources; specialized PC hardware and operating systems aren't required. The product can also work in conjunction with Digital's PCSA (Personal Computing Systems Architecture) PC-integration software.

ALL-IN-1 DESKtop Software for DECwindows Workstations: ALL-IN-1 DESKtop software for DECwindows workstations integrates workstation users into the ALL-IN-1 office workgroup, providing a DECwindows interface to ALL-IN-1 applications and services, and enabling workstation applications to utilize the ALL-IN-1 File Cabinet. ALL-IN-1 DESKtop for VMS DECwindows is the first ALL-IN-1 product for workstations -- allowing ALL-IN-1 users to take advantage of DECwindows technology and CDA (Compound Document Architecture) compliant applications such as electronic publishing and image processing.

ALL-IN-1 DESKtop for VMS DECwindows provides workstation users with windowed access to server-based ALL-IN-1 applications and services, and lets users work with full-page document viewing and multiple windows. In addition, the product offers windowed X.400-adherent ALL-IN-1 Mail and VAX Notes electronic conferencing applications.

To complement these capabilities, Digital is offering the ALL-IN-1 DESKtop Package for VMS DECwindows. This packaged set of powerful NAS-based DECwindows applications includes Digital's DECwrite for electronic publishing, DECdecision advanced decision support software, and VAX VTX corporate videotex software, giving workstation users unprecedented integrated office computing capabilities at a very competitive price.

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Redefining Integrated Office Applications and Services.

The integrated office system is being redefined under the ALL-IN-1 Phase II program. In its first phase, ALL-IN-1 provided a set of integrated end-user tools like document processing, mail, and a file cabinet for storing text. And the system allowed for task simplification, with the ALL-IN-1 script language that enabled programmers to develop "behind-the-scenes" routines to automate users' office computing tasks. ALL-IN-1 Phase II adds to these capabilities with support for work teams, facilitating the way in which people work together in physical and logical groups throughout an organization.

The integrated office system delivered under the ALL-IN-1 Phase II program will offer team-members a suite of advanced capabilities that allow them to coordinate their tasks and share information. These capabilities include integrated group conferencing, compound document support for electronic publishing, network-wide shared file cabinets, and project management services for planning, scheduling, and controlling team projects.

ALL-IN-1 Version 2.4 begins to implement team support with the following features.

o Group Conferencing for Many-to-Many Communications:

Digital's VAX Notes electronic conferencing application is now included with every ALL-IN-1 system, integrated with a simple-to-use ALL-IN-1 interface. This group conferencing capability enables ALL-IN-1 users throughout the network to easily communicate on a many-to-many basis.

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- o File Cabinet Support for CDA: ALL-IN-1 users can now store documents in the CDA DDIF (Digital Document Interchange Format) format directly in the ALL-IN-1 File Cabinet. These documents can be read, edited, printed, and mailed to other users anywhere on the network. With this ability, and with group conferencing which also supports CDA, ALL-IN-1 users can easily share compound documents containing text, graphics, images, spreadsheets, graphs, and tables with other users throughout the network.

The ALL-IN-1 integrated office system will continue to provide new and innovative network-based services and applications. This includes network-wide shared file cabinet capabilities that support compound documents, and that can be accessed from any of the NAS-supported desktops.

And Digital's Electronic Data Interchange (EDI) application services will be an integral component of applications based on NAS; therefore, EDI will be accessible through applications integrated with ALL-IN-1. EDI information will also be transferred between business applications with MAILbus, utilizing the same electronic mail backbone as other ALL-IN-1 Phase II applications.

ALL-IN-1 STARTER: Making it Easier to Start Small and Grow Big. For added flexibility in implementing the best office system, Digital also offers ALL-IN-1 STARTER Version 2.4, a low-cost set of primary ALL-IN-1 office services including Electronic Messaging, Document Processing, File Cabinet and file cabinet management, and system management utilities.

At one-half the price of ALL-IN-1 Version 2.4, ALL-IN-1 STARTER meets the needs of customers that want an integrated office system and server with enterprise-wide messaging and document processing, but do not require the full set of advanced ALL-IN-1 capabilities and application options. And ALL-IN-1 STARTER can be easily upgraded to an ALL-IN-1 system as needs expand.

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ALL-IN-1, ALL-IN-1 STARTER, Business Intelligence, CDA, DEC, DECdecision, DECimage, DECnet, DECwindows, DECwrite, DDS, LiveLink, MAILbus, PCSA, RMS, ULTRIX, VAX, VAX Notes, VAX Rdb/VMS, VAX SQL/Services, VAX VTX, VMS, VT, and WPS-PLUS are trademarks of Digital Equipment Corporation.

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UNIFIED SOFTWARE ENVIRONMENT

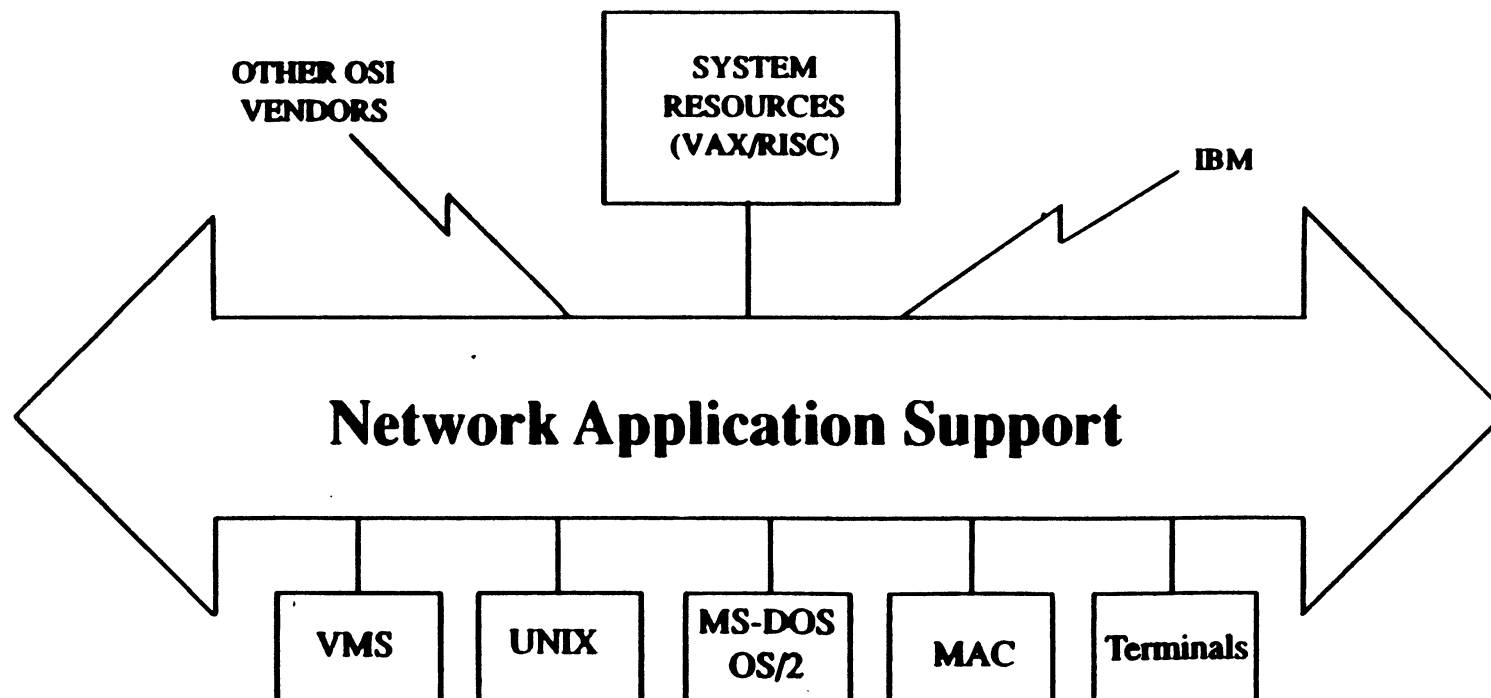


Figure 1 -- Network Application Support: Unified Software Environment

DIGITAL'S ELECTRONIC MAIL SOLUTION

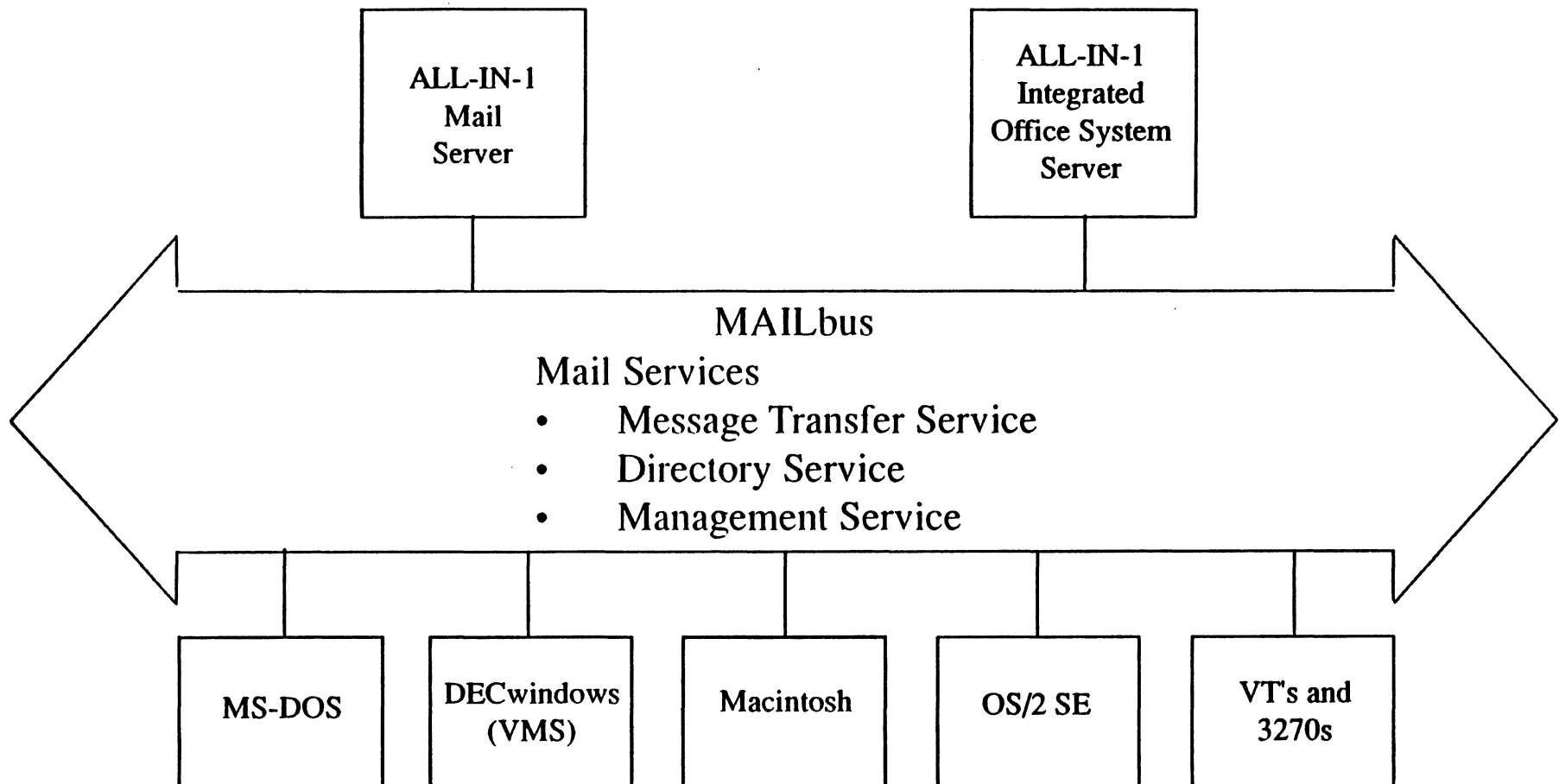


Figure 2 -- ALL-IN-1 Phase II Electronic Mail Environment

ALL-IN-1 Business Intelligence Environment

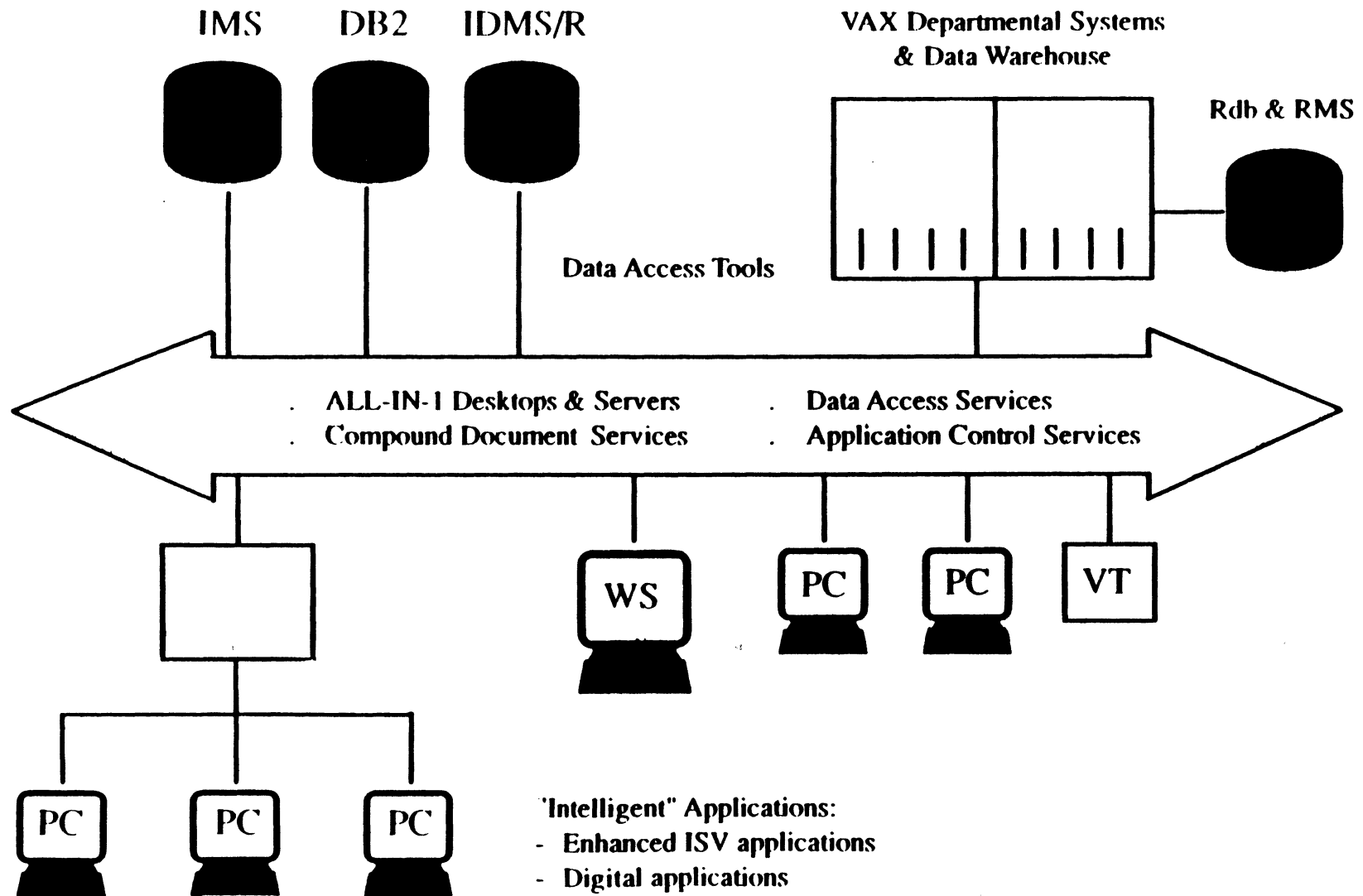


Figure 3 -- ALL-IN-1 Business Intelligence Environment

What Users Can Do...

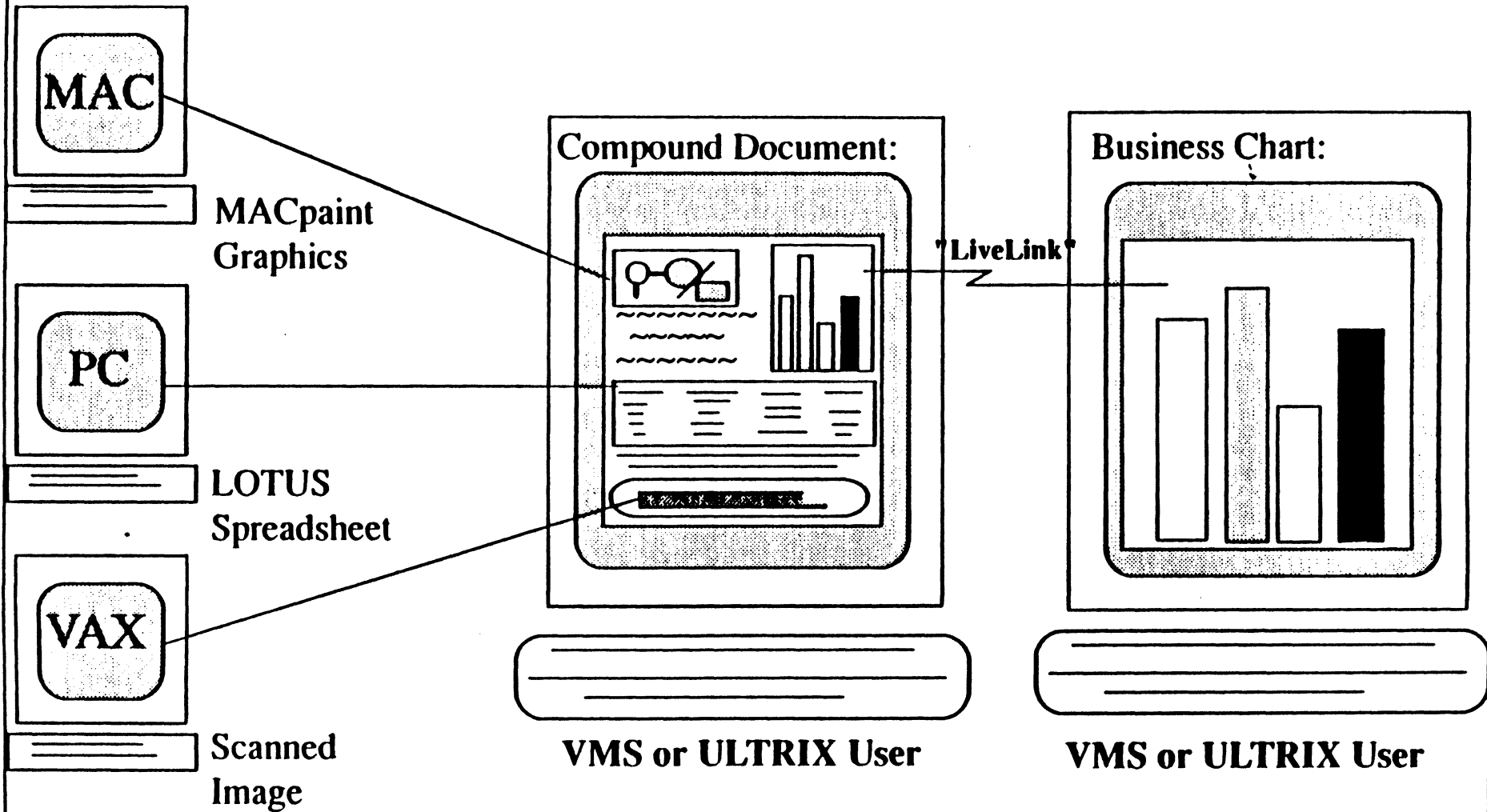


Figure 4 -- What Users Can do With ALL-IN-1 Electronic Publishing Applications